



09/04/2022

2022.09.04 Project Skunkworks: **Cellular Reagents™**, **Genetic Formulation™** and **Open Source qPCR™**

Enzyme Creative Work by: Fernando Andrade Jr., M.S., CEO, Founder of Radegen Biotechnology. Director of the RadegenBio Skunkworks Division.

Creative Business Concept: Radegen Biotechnology is busy developing dried **Cellular Reagent™** technology. The following publications were used to develop the following creative concept: **a fully functional enzymatic molecular reagent like a polymerase or a restriction enzyme made from dried microbial cells engineered to overexpress the proteins needed for the enzymatic reagent.** For example, a cell line designed for making a TypeIIIS restriction enzyme reagent will be designed to express a T4 ligase, the TypeIIIs restriction enzyme, and a methyl transferase from genetic elements designed to produce a desired ratio of proteins. This process is termed by Radegen Biotechnology as **Genetic Formulation™** and is a process that simplifies formulation because a cell culture produces all required proteins for a functional molecular reagent. Cocktails of proteins produced by Genetic Formulation™ can be used in both the **Cellular Reagent™** format and for purifying proteins using a common purification tag. **Cellular Reagents™** will also be formulated by making cocktails of engineered microbes that overexpress single proteins. *Escherichia coli* and *Pseudomonas putida* are the two species of bacteria that will be used as host strains for heterologous protein expression. **Cellular Reagents™** will be used to formulate **Open Source qPCR™** reagents for probe-based assays. **Open Source qPCR™ reagents will also be developed from purified protein cocktails and provided as a product either dried or suspended in buffer and frozen.**

1. 2015. PloS Negl Torp Dis. Apr; 9(4): e0003606. PMID: 25830546
2. 1998. J Clin Microbiol. Jun;36(6):1798-800. PMID:9620427
3. 2022. Curr Protoc. Mar;2(3):e387. PMID: 35263038
4. 2018. PLoS One. Aug 15;13(8):e0201681. PMID: 30110361